IN THE DRAWINGS

The drawings are amended to correct informalities. Replacement Sheets of Figures 58-60 are submitted herewith so as to be designated as prior art. No new matter is added.

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REMARKS

This Amendment is in response to the final Office Action mailed on October 1, 2008. Claims 12 and 25 are amended editorially. No new matter is added. Claims 1-30 are pending with claims 31-67 being withdrawn.

Drawing Objections:

Figures 58-60 are objected to for informalities. Replacement Sheets of Figures 58-60 are submitted herewith so as to be designated as prior art, as suggested by the Examiner. Withdrawal of this objection is requested.

§112, Second Paragraph:

Claim 12 is rejected as being indefinite. In particular, the phrase "between the upper end position and the lower end position" is rejected as lacking antecedent basis. Claim 12 is amended to depend from claim 11 which recites "an upper end position" and "a lower end position". Accordingly, claim 12 is no longer indefinite and a withdrawal of this rejection is requested.

§102 Rejections:

Claims 1, 2, 6, 17-19, 21 and 22 are rejected as being anticipated by Nishiyama (US Patent No. 5,664,238). This rejection is traversed.

Claim 1 is directed to a lens driving apparatus that requires, among other features, a lens position calculator that determines a position obtained by performing addition or subtraction on the reference position read out from the reference position storage as a judgment position, and judges whether the output value of the position detection sensor at the judgment position reaches the threshold value or not, so as to determine the reference position again. An advantage of these features is that the generation of detection errors resulting from variations in the mechanical and electrical properties of a lens unit can be prevented, as a reference position is determined outside of normal operation.

Nishiyama does not disclose or suggest these features of claim 1. The rejection asserts that the focusing motor control circuit 13 of Nishiyama teaches the lens portion calculator of claim 1. The rejection also asserts that column 4, line 44 of Nishiyama

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teaches a lens position calculator that determines a position obtained by performing addition or subtraction on the reference position read out from the reference position storage as a judgment position. However, column 4, line 44 of Nishiyama merely discloses that the arithmetic circuit 10 calculates $a - a'$, a/b, a'/b' and $a/b - a'/b'$ which are differences of evaluation values and do not represent either a "position obtained by performing addition or subtraction on the reference position" or a "judgment position" (see column 4, lines 38-45).

Moreover, Nishiyama discloses that the controller is configured to judge whether the present evaluation value is a maximum value or not while the focusing motor is driven (see column 4, line 65-column 5, line 8 and Figure 4 of Nishiyama). Thus, even if this portion of Nishiyama is interpreted to correlate with the features of claim 1, the entire driving range of the focusing motor would become the judgment position, thereby making the lens position calculator essentially useless. Accordingly, Nishiyama does not disclose or suggest a lens position calculator that determines a position obtained by performing addition or subtraction on the reference position read out from the reference position storage as a judgment position, as required by claim 1.

Also, the rejection asserts that column 5, lines 9-31 of Nishiyama discloses a lens position calculator that judges whether the output value of the position detection sensor at the judgment position reaches the threshold value or not, so as to determine the reference position again. However, column 5, lines 9-31 of Nishiyama merely discloses that the focusing motor is driven at a speed V1 or V2 or driven in the opposite direction depending on the evaluation value. Nowhere does this portion of Nishiyama disclose or suggest a lens position calculator that judges whether the output value of the position detection sensor at the judgment position reaches the threshold value or not, so as to determine the reference position again, as required by claim 1. For at least these reasons claim 1 is not suggested by Nishiyama and should be allowed. Claims 2 and 6 depend from claim 1 and are not unpatentable over Nishiyama for at least the same reasons.

Claim 17 is directed to a lens driving apparatus that requires, among other features, a lens position calculator that designates as a judgment position having a same phase as a phase of the reference position read out from the reference position storage,

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and judges whether the output value of the position detection sensor at the judgment position reaches a second threshold value different from the first threshold value or not, so as to determine the reference position again. An advantage of these features is that the generation of detection errors resulting from variations in the mechanical and electrical properties of a lens unit can be prevented, as a threshold value of the output value of the position detection sensor, used as a reference of the judgment during the normal operation, is made a value different from the threshold value of the process adjustment.

Nishiyama does not disclose or suggest these features of claim 17. The rejection asserts that the focusing motor control circuit 13 of Nishiyama discloses the lens portion calculator of claim 17. The rejection also asserts that column 5, lines 1-44 of Nishiyama teaches a lens position calculator that designates as a judgment position having a same phase as a phase of the reference position read out from the reference position storage. However, column 5, lines 1-44 of Nishiyama merely discloses designating a driving speed and driving direction of the motor and does not describe the designation of a judgment position. Also, even if this portion of Nishiyama is read to correlate to the features of claim 17, the entire driving range of the focusing motor of would become the judgment position, thereby making the lens position calculator essentially useless.

The rejection also asserts that column 5, lines 1-44 of Nishiyama discloses a lens position calculator that judges whether the output value of the position detection sensor at the judgment position reaches a second threshold value different from the first threshold value or not, so as to determine the reference position again. As discussed above, column 5, lines 1-44 of Nishiyama merely discloses designating a driving speed and driving direction of the motor. Nowhere does this portion of Nishiyama disclose or suggest a lens position calculator that judges whether the output value of the position detection sensor at the judgment position reaches a second threshold value different from the first threshold value or not, so as to determine the reference position again, as required by claim 17. For at least these reasons claim 17 is not suggested by Nishiyama and should be allowed. Claims 18, 19, 21 and 22 depend from claim 17 and are not unpatentable over Nishiyama for at least the same reasons.

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§103 Rejections:

Claims 9, 10, 23 and 24 are rejected as being unpatentable over Nishiyama in view of Tanaka (US Patent No. 6,330,398). This rejection is traversed. Claims 9 and 10 depend from claim 1 and should be allowed for at least the same reasons described above. Claims 23 and 24 depend from claim 17 and should be allowed for at least the same reasons described above. Applicants do not concede the correctness of this rejection.

Claims 14, 15, 28 and 29 are rejected as being unpatentable over Nishiyama in view of Yamashita (US Patent No. 5,124,738). This rejection is traversed. Claims 14 and 15 depend from claim 1 and should be allowed for at least the same reasons described above. Claims 28 and 29 depend from claim 17 and should be allowed for at least the same reasons described above. Applicants do not concede the correctness of this rejection.

Claims 16 and 30 are rejected as being unpatentable over Nishiyama in view of Tanaka and further in view of Yamashita. This rejection is traversed. Claim 16 depends from claim 1 and should be allowed for at least the same reasons described above. Claim 30 depends from claim 17 and should be allowed for at least the same reasons described above. Applicants do not concede the correctness of this rejection.

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Conclusion:

Applicant respectfully asserts that claims 1-30 are in condition for allowance. If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's primary attorney-of record, Douglas P. Mueller (Reg. No. 30,300), at (612) 455-3804.

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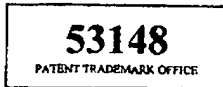
Dated: February 2, 2009

Respectfully submitted,

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